

So fresh and so clean:

Urban community engagement to keep streets trash-free and improve the sustainability of drainage infrastructure (P145184)

Concept note and research design updates

The project has made significant progress since the concept note was approved in January 2014. This document provides a brief update on the intervention design, the sampling process, timeline and budget, baseline survey instruments, other research updates.

Intervention Design

The focus interventions have been developed from both a research design and an operational perspective. As envisioned in the concept note, two interventions will be evaluated by the IE. First, community micro-projects (*Projets d'Investissement Communautaire, or PICs*), which are investments of US\$10-70k implemented by community-based organizations, with a high-level of implementation support and supervision from ADM and its implementing partners. Second, a lighter-touch *Operation Quartier Propre* (OQP) intervention. A detailed operational manual (attached) has been developed, which provides detailed information on the nature of the interventions and how they will be implemented in practice. We summarize some of the important features here, focusing in particular on the OQP where considerable progress has been made since the approval of the concept note (in contrast with the PICs, the OQP intervention was added during the IE concept development process, and at the time of the concept note review concrete details on this intervention did not yet exist).

The OQP will involve a formal commitment by a targeted Community Based Organization (CBO) to engage with the local community to work on improving and maintaining the cleanliness of public spaces and drainage infrastructure. This commitment will be formalized through signing a “letter of engagement” with the local municipality. In the original concept note, this intervention was described as a “social contract”; however, consultations with ADM and the local social facilitators (ENDA and MSA – the social facilitators are responsible for the implementation of all community engagement activities under the Senegal Stormwater Management Project) suggested that the use of the term “contract” should be avoided. A key component of the OQPs is that they are light-touch in the sense that they require a minimum level of contact with the social facilitators responsible for implementing the program and are inexpensive in that the incentives are relatively low-cost non-monetary incentives. The incentive structure will reward communities and CBOs through social recognition for the work that they do rather than through private pecuniary rewards. This has the advantage of making the intervention easily scalable from both an administrative and financial point of view, if found to have positive impacts. That said, the research team did propose that financial rewards be considered during the intervention design process, but the implementing agency did not agree to this for reasons of local politics.

The incentive structure will be as follows. Groups will receive an initial endowment in the form of standard cleaning equipment that is provided to them through the municipality (the manual contains the full list). After six months, the progress of the CBOs toward achieving an agreed set of targets will be evaluated against a small set of standardized benchmarks, and where acceptable progress has been made the CBO will be rewarded with a plaque or a banner that will be displayed in a public place signaling their involvement and success in maintaining the cleanliness of their community. At the end of the intervention period (after 1 year) CBOs that have fulfilled all criteria will receive in-kind incentives in the form of t-shirts, cooking materials and plastic chairs, and the right to keep the formerly distributed initial endowment (the endowment and incentives were

developed through consultations with the implementing agency and their contracted social facilitators; full details of the nature of these incentives can be found in the manual). In addition, a public ceremony will be held to formally acknowledge and reward the CBOs that have been successful. A full set of criteria against which the work of CBOs will be evaluated have been drawn up and details are provided in the manual.

Sampling:

Detailed maps of the study area have been drawn up in consultation with the local partners. After discussions with ADM and the local NGOs, it was decided that the most appropriate unit of intervention would be the *quartier*, or neighborhood. The intervention zone is divided into two phases, phase 1 where PROGEP infrastructure investments are currently ongoing, and phase 2, where the start date of these investments is dependent on additional project financing. In total, 395 quartiers are recorded in the entire zone, 143 in phase 1 and 252 in phase 2. Within this area, 160 quartiers are to be included in the study, with 80 quartiers in the treatment group and 80 in the control group. In each quartier, a focal CBO is in the process of being identified and a sample of 2,400 households will be randomly selected across all quartiers included in the study (15 per quartier). Quartiers are grouped according to a set of criteria drawn up by the social facilitators, who have intimate knowledge of the study areas, on the basis of geography and social ties between quartiers. There are a total of 47 groupings or sites, 27 in phase 1 and 20 in phase 2. Within each grouping, quartiers are randomly assigned to treatment and control groups. This will take place by way of public lottery to ensure transparency and buy-in from the local communities involved.

As the results for Phase 1 and Phase 2 areas may be quite different, they will be analyzed separately. Therefore, to give an upper bound for the minimum detectable standard effect size (MDES), the relevant number of sites is 20. Table 1 below gives MDEs for household level indicators for different ICCs and variation explained by co-variates (R^2), assuming 20 sites and 4 quartiers per site, 2 treatment and 2 control. The number of households to be surveyed per quartier is 15. All calculations are done with power at 80% and significance level at 5%.

Table 1: MDEs for different ICCs and R^2 assuming 20 sites, 4 clusters per site and 15 households per cluster

ICC \ R^2	0.4	0
0.04	0.21	0.22
0.1	0.24	0.27
0.15	0.26	0.31

Timeline and budget

The number of surveys has been reduced from 5 (semi-annual, with one survey immediately following the rainy season and another six months later over a period of 2 years) to a baseline and one single follow-up for reasons of budget and procurement processes. Data collection contracts are managed directly by ADM and financed by the Nordic Development Fund, each of which have lengthy and complex procurement procedures, in addition to those of the World Bank. The originally proposed frequency of surveys is therefore not practical. Upon further consideration by the research team, the additional surveys originally proposed in the concept note are also not of fundamental importance for the proposed research. The budget (see below) has been adjusted accordingly.

The updated timeline from the present on is given in table 2 below:

Table 2: updated timeline

Item	Timeline
Roll-out of PICs	Preparations for implementation ongoing
IE randomization	September 2014
Baseline survey	November-December 2014
Experimental roll-out of OQP	December 2014
Baseline analysis, reporting, and dissemination	January-May 2015
Follow-up survey	November-December 2015
Final IE analysis, reporting and dissemination	January-September 2016

Table 3 gives an updated budget for IE data collection and research team activities. Total IE budget through the completion of the study is estimated at \$517k, which represents an important decrease in the budget anticipated at the time of concept note review (\$972k). This decrease is due mainly to the elimination of intermediate survey rounds.

Table 3: Updated budget in USD

	To date	FY15	FY16	FY17	Total
Funding needs					
- Data collection budget	-	150,000	180,000	-	330,000
- Purchase of replacement tablets	-	-	2,000	-	2,000
- Research team time and travel	50,000	60,000	60,000	15,000	185,000
Total	50,000	210,000	242,000	15,000	517,000
Funding sources					
- Nordic Development Fund	-	140,000	170,000		310,000
- Contribution from CMU (BB)	30,000	23,000	25,000	10,000	88,000
- Bank-Netherlands Partnership TF	20,000	-	-	-	20,000
Total anticipated funding	50,000	163,000	195,000	10,000	418,000
Anticipated funding gap	-	47,000	47,000	5,000	99,000

* Assumes cost sharing with P148392

As stated in the concept note, we expect the majority of data collection costs will be financed by the Nordic Development Fund (funding for the baseline is secured), though this is something that needs to be negotiated on an annual basis as part of the project's procurement plan for the following year. With this assumption, we currently have a funding gap of approximately \$50k in FY15 and FY16, and of \$5k prior to the start of dissemination in FY17. We request an i2i implementation grant to fill this funding gap. The research team will continue to seek out complementary funding opportunities to avoid the risk of a break in activities due to insufficient funding for either data collection or the research team's activities. Implementation of the PICs and the OQP intervention are funded directly under the PROGEP's operational budget.

Baseline Survey Instruments:

The scope of surveys remains as originally proposed, namely household, community (involving direct observation, behavioral decision activities to measure willingness to contribute to public goods, and potentially a brief group survey), and a CBO survey, all of which will be administered at baseline and follow-up (the baseline CBO survey will be adjusted so as not to introduce survey effects particularly in control areas). The expert assessment of the physical condition and functionality of drainage infrastructure will be conducted at follow-up, as originally proposed.

During the concept note review, it was recommended that in-depth qualitative work be conducted in a sub-sample of project areas following initial IE analysis to better understand the processes through which the interventions achieve (or why they fail to achieve) their impacts. The team would like to employ this approach if funding allows.

All evaluation instruments (attached) have been developed by the study team in consultation with local partners and are currently being programmed for pre-testing

Additional Research Updates

1. We will conduct **baseline balance checks** on the following variables to ascertain whether the random assignment (of the OQP intervention) resulted in treatment and comparison groups which are, on average, equivalent across key indicators, and to identify important variables on which to control in subsequent analyses. In addition to basic socioeconomic and demographic household indicators, we will check for balance in key indicators at various levels:
 - Individual and household level: flood prevention and risk mitigation-related knowledge, attitudes, and behaviors; health status of household members
 - CBO level: CBO capacity (number of members; annual budget); involvement in clean-up and flood prevention activities
 - Community (or quartier) level: willingness to contribute to public goods
2. The team is acutely aware of the **threat of spillovers** from treatment into control *quartiers*. As noted during the concept note review, the randomization strategy will be optimized based on further detail on the geographic location and social linkages between *quartiers* in the study area. The mapping and grouping of *quartiers* was completed on July 28 following an iterative process involving the Dakar Municipal Development Agency, the social facilitators, World Bank operations, and the research team. We will continue to consider how best to minimize the threat of spillovers during the randomization process. The creation of buffer zones to separate treatment and control *quartiers* remains an option.